

IN THE CLAIMS:

Please cancel claims 18, 26, 28, 34, 40, and 41, without prejudice.

Please amend claims 19, 24, 25, 27, 29, 30, 35, 38, 39, 42, and 43, as follows:

19. A method to provide failover protection in a data storage and retrieval system in the event of an accessor failure, wherein said data storage and retrieval system includes a garage, one or more portable data storage media, two or more moveable accessors, and two or more accessor controllers, wherein said two or more accessors can communicate with one another, and wherein each of said two or more accessors comprises an accessor controller and a work queue stored in that accessor controller, and wherein said two or more accessors include a first accessor and one or more remaining accessors, said method comprising the steps of:

providing a work request to each of said two or more accessors;

creating by each of said two or more accessor controllers a pending work entry comprising said work request;

adding said pending work entry to the work queue stored in each of said two or more accessor controllers;

communicating a notification from said first accessor to said one or more remaining accessors that said first accessor is initiating said pending work entry;

acknowledging said notification by each of said remaining accessors;

determining if said first accessor reports completion of said pending work entry;

determining if said first accessor can communicate with said one or more remaining accessors;

determining if said first accessor has completed said pending work entry; and

determining if said first accessor has a portable data storage medium releaseably attached thereto.

24. The method of claim 19, wherein said pending work entry includes retrieving a designated one of said one or more portable data storage media, further comprising the steps of:

- repositioning said first accessor;
- attempting to retrieve said designated portable data storage medium;
- determining if said designated portable data storage medium was successfully retrieved;
- operative if said designated portable data storage medium was successfully retrieved, completing said pending work entry using said first accessor; and
- operative if said designated portable data storage medium was not successfully retrieved, providing an error message that said designated portable data storage medium was not retrieved.

25. The method of claim 19, wherein said data storage and retrieval system further comprises a data storage device, and wherein pending work entry includes inserting a designated one of said one or more portable data storage media in said data storage device, said method further comprising the steps of:

- repositioning said first accessor;
- attempting to insert said designated portable data storage medium in said data storage device;
- determining if said designated portable data storage medium was successfully inserted in said data storage device; and
- operative if said designated portable data storage medium was not successfully inserted

in said data storage device, providing an error message.

27. The method of claim 19, wherein said first accessor has a portable data storage medium releaseably attached thereto, further comprising the steps of:

extracting said data storage medium from said first accessor using one of said one or more remaining accessor;

completing said pending work entry;

updating said work queue to indicate that said pending work entry is completed; and
providing an error message.

29. The method of claim 19, wherein said first accessor has a data storage medium releaseably attached thereto, further comprising the steps of:

detecting by said first accessor a logical error;

communicating said logical error to each of said remaining accessors;

moving said first accessor to said garage;

operative if said pending work entry has been completed, updating said work queue to indicate that said pending work entry is completed;

operative if said pending work entry has not been completed, updating said work queue to indicate that said pending work entry remains pending;

extracting said data storage medium from said first accessor using one of said one or more remaining accessors;

completing said pending work entry;

updating said work queue to indicate that said pending work entry is completed; and
providing an error message.

30. The method of claim 19, wherein said pending work entry comprises retrieving a designated portable data storage medium from a source location and disposing that designated portable data storage medium in a destination location, further comprising the steps of:

determining if said designated portable data storage medium is releaseably attached to said first accessor;

operative if said designated portable data storage medium is not releaseably attached to said first accessor, determining if said designated portable data storage medium is disposed in said source location;

operative if said designated portable data storage media is not releaseably attached to said first accessor, and if said designated portable data storage medium is not disposed in said source location, determining if said designated portable data storage medium is disposed in said destination location;

operative if said designated portable data storage media is not releaseably attached to said first accessor, and if said designated portable data storage medium is not disposed in said source location, and if said designated portable data storage medium is not disposed in said destination location, determining that said designated portable data storage medium is on the floor of said data storage and retrieval system; and

providing an error message to the system user.

35. A data storage and retrieval system comprising a computer useable medium having computer readable program code disposed therein to provide failover protection in a data storage and retrieval system, wherein said data storage and retrieval system includes a garage, one or a plurality of portable data storage media, two or more moveable accessors, two

or more accessor controllers, wherein said two or more accessors can communicate with one another, wherein each of said two or more accessors comprises an accessor controller and a work queue stored in that accessor controller, and wherein said two or more accessors include a first accessor and one or more remaining accessors, the computer readable program code comprising a series of computer readable program steps to effect:

providing a work request to each of said two or more accessors;

creating by each of said two or more accessor controllers a pending work entry comprising said work request;

adding said pending work entry to the work queue stored in each of said two or more accessor controllers;

communicating a notification from said first accessor to said one or more remaining accessors that said first accessor is initiating said pending work entry;

acknowledging said notification by each of said remaining accessors;

determining if said first accessor reports completion of said pending work entry;

determining if said first accessor can communicate with said one or more remaining accessors;

determining if said first accessor has completed said pending work entry; and

determining if said first accessor has a portable data storage medium releaseably attached thereto.

38. The data storage and retrieval system of claim 35, wherein said pending work entry includes retrieving a designated one of said one or a plurality of data storage media, said computer readable program code further comprising a series of computer readable program

steps to effect:

repositioning said first accessor;

attempting to retrieve said designated portable data storage medium;

determining if said designated portable data storage medium was successfully retrieved;

operative if said designated portable data storage medium was successfully retrieved,

completing said pending work entry using said first accessor; and

operative if said designated portable data storage medium was not successfully

retrieved, providing an error message that said designated portable data storage medium was not retrieved.

39. The data storage and retrieval system of claim 35, wherein said data storage and retrieval system further comprises a data storage device, and wherein pending work entry includes inserting a designated one of said one or a plurality of data storage media in said data storage device, said computer readable program code further comprising a series of computer readable program steps to effect:

repositioning said first accessor;

attempting to insert said designated portable data storage medium in said data storage device;

determining if said designated portable data storage medium was successfully inserted;

and

operative if said designated portable data storage medium was not successfully inserted,

providing an error message.

42. The data storage and retrieval system of claim 35, wherein said first accessor

further comprises:

a lifting servo section;

a centering cam disposed on said lifting servo section;

a centering plunger, wherein said centering plunger has a first end and a second end, and wherein said first end extends outwardly from said lifting servo section and said second end is disposed adjacent said centering cam;

wherein said computer readable program code further comprises a series of computer readable steps to effect causing said centering cam to impact said centering plunger.

43. The data storage and retrieval system of claim 35, wherein said pending work entry comprises retrieving a designated portable data storage medium from a source location and disposing that designated portable data storage medium in a destination location, wherein said computer readable program code further comprises a series of computer readable steps to effect:

determining if said designated portable data storage medium is releaseably attached to said first accessor;

operative if said designated portable data storage medium is not releaseably attached to said first accessor, determining if said designated portable data storage medium is disposed in said source location;

operative if said designated portable data storage media is not releaseably attached to said first accessor and if said designated portable data storage medium is not disposed in said source location, determining if said designated portable data storage medium is disposed in said destination location;

operative if said designated portable data storage media is not releaseably attached to said first accessor and if said designated portable data storage medium is not disposed in said source location and if said designated portable data storage medium is not disposed in said destination location, determining that said designated portable data storage medium is on the floor of said data storage and retrieval system; and
providing an error message to the system user.

LAW OFFICE OF
DALE F. REGELMAN, P.C.
4231 S. Fremont Street
Tucson, Arizona 85714

TEL 520-741-7636
FAX 520-746-9114